

Citations and Bibliographies

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2022-03-14

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Introduction

The simplest way to do citations and bibliographies in RMarkdown is simply to use author-date citation like this:

The Urey reaction (Archer 2011, p. 98) shows how silicate weathering can convert atmospheric carbon (in the form of CO_2) into rocks at the bottom of the ocean (in the form of CaCO_3).

And then just manually enter a bibliography at the end of the document:

- Archer, David (2011). *Global Warming: Understanding the Forecast* (Wiley)
- Rogelj, Joeri, McCollum, David L., Reisinger, Andy, Meinshausen, Malte, and Riahi, Keywan (2013). Probabilistic cost estimates for climate change mitigation, *Nature* **493**, 79–83.

Getting fancy with citations and bibliographies

However, if you want to experiment with something fancier, RMarkdown has the ability to automatically format bibliographic information and manage citations. Using this is a little complicated because you need to have file with your bibliographic information entered in a certain format.

Everything that follows describes how to do citations and bibliographies with RMarkdown using bibliography files. If you wish, you may ignore the rest of this document and manage your citations and bibliographies manually, as described at the top of this file.

RMarkdown can work with a wide variety of file formats for bibliographies, including those produced by many common software packages, such as EndNote, Zotero, and Mendeley. You can find further documentation about bibliographies and citations at http://rmarkdown.rstudio.com/authoring_bibliographies_and_citations.html

Bibliography Files

RMarkdown reads bibliography entries from an external bibliography file. To specify the bibliography file, you would just add a line to the header of your RMarkdown document: for instance,

```
---
title: "My Lab Report"
subtitle: "EES 3310: Global Climate Change"
author: "Jonathan Gilligan"
date: "Sept. 27, 2018"
bibliography: "my-bibliography.bib"
---
```

RMarkdown can figure out the kind of bibliography file it is from the file extension (.bib, etc.). I have provided an example BibTeX file, lab-05.bib that has examples of entries.

For the examples here, I will work with a format called BibTeX because most common software packages can export bibliographies in BibTeX format, and Google Scholar can also provide citations in BibTeX format that you can copy and past from a browser. BibTeX files are plain text and you can edit them in RStudio.¹

If you prefer, you can also use bibliographic software, such as Zotero,² Mendeley, or EndNote, and export your bibliography in RIS format (as a .ris file), BibTeX format (as a .bib file), or BibLaTeX format (as a .biblatex file). RMarkdown claims to support the following file types as well, but I have not tried them, so I would not be able to provide much help if you try them and run into trouble.

¹If you will use BibTeX files often, I recommend a free tool called JabRef, which lets you edit the information in a BibTeX file in a graphical interface without having to worry about the details of the BibTeX format. You can get JabRef from <http://www.jabref.org/>. It runs on Windows, MacOS, and Linux.

²I recommend Zotero, which is a free, easy to use, and very powerful bibliography tool that supports Windows, MacOS, and Linux, and has add-ins that integrate very nicely with most browsers (Chrome, Firefox, Safari, and Opera) and also has a good add-in to let you use it in Microsoft Word. Zotero has hundreds of bibliography styles for different uses, including standard ones, such as Chicago, APA, and MLS. You can get Zotero from <https://zotero.org>. One reason I like Zotero enormously is that the web browser add-in creates an icon in the browser's toolbar that recognizes when you are reading an article in a scholarly journal, a newspaper, a magazine, a blog, etc., and you can just click on the icon to import whatever you're reading in your browser into your bibliography database. You can also sign up for a free account on <https://www.zotero.org/user/register> that will let you back up your bibliography database to the cloud, synchronize your bibliographies across multiple computers, and share bibliographies with other people.

Format	File extension
EndNote	.enl
EndNote XML	.xml
RIS	.ris
BibTeX	.bib
ISI	.wos
MEDLINE	.medline
MODS	.mods
Copac	.copac
JSON citeproc	.json

You can export files in many of these formats (especially RIS and BibTeX) from most bibliographic software packages, such as EndNote, Mendeley, and Zotero.

Citations

In your document, you can cite books, articles, etc. by the identifiers, or *keys*, that appear in the database.³ If you open the bibliography file in RStudio, you will see that all references begin with a reference type, starting with @ (e.g., @book for a book, @article for an article in a journal, etc.) and then all the data for the reference is contained between a pair of braces { . . . }. The first thing after the opening brace will be the citation key, followed by a comma:

```
@book{archer.forecast.2011,
  title = {Global Warming: Understanding the Forecast},
  author = {Archer, David},
  publisher = {Wiley},
  address = {Hoboken, NJ},
  year = {2011},
  edition = {2nd}
}

@article{rogelj2013probabilistic,
  title={Probabilistic cost estimates for climate change mitigation},
  author={Rogelj, Joeri and McCollum, David L and Reisinger, Andy and
    Meinshausen, Malte and Riahi, Keywan},
  journal={Nature},
  volume={493},
  pages={79--83},
  year={2013},
}
```

The citation keys for these two references are `archer.forecast.2011` and `rogelj2013probabilistic`.

I can insert citations in an RMarkdown document by putting them inside square brackets ([. . .]) and putting an @ in front of the citation key: `[@archer.forecast.2011]` will become (Archer 2011). I can cite a specific page with `[@archer.forecast.2011, p. 143]`, which becomes (Archer 2011, 143). I can also add some preceding text:

`[See, e.g., @archer.forecast.2011, pp. 75--78]`

becomes (See, e.g., Archer 2011, 75–78).

I can cite multiple authors:

³In BibTeX files, the identifiers can be any sequence of letters, numbers, and any of the following punctuation: ‘_’, ‘.’, ‘:’, and ‘;’.

`[@archer.forecast.2011, @nordhaus.casino.2013, and @pielke.climate.fix.2010]`.

becomes

Pielke (2010).

If I want to omit the name of the author (for instance, if I have named him or her earlier in the text), I can put a minus sign in front of the @:

Archer describes the water-vapor feedback `[-@archer.forecast.2011]`.

becomes

Archer describes the water-vapor feedback (2011).

I can also put citations in-line by omitting the square brackets:

`@jaeger.adams.fallacy.2008` argue that focusing only on the economic impacts of climate change is misleading.

becomes

Jaeger, Schellnhuber, and Brovkin (2008) argue that focusing only on the economic impacts of climate change is misleading.

and I can also add page numbers or other text to follow the year in the citation by putting them in square brackets after an in-text citation:

`@rogelj2013probabilistic` [Fig. 2, p. 81] show that if political inaction causes even modest delays in reducing carbon emissions, it can dramatically increase the cost of mitigating climate change.

becomes

Rogelj et al. (2013Fig. 2, p. 81) show that if political inaction causes even modest delays in reducing carbon emissions, it can dramatically increase the cost of mitigating climate change.

The Bibliography

RMarkdown will insert a formatted bibliography at the end of your document. It will not automatically put a section heading, so you probably want to put a section heading called “Bibliography” or “Works Cited” to set this off from your text.

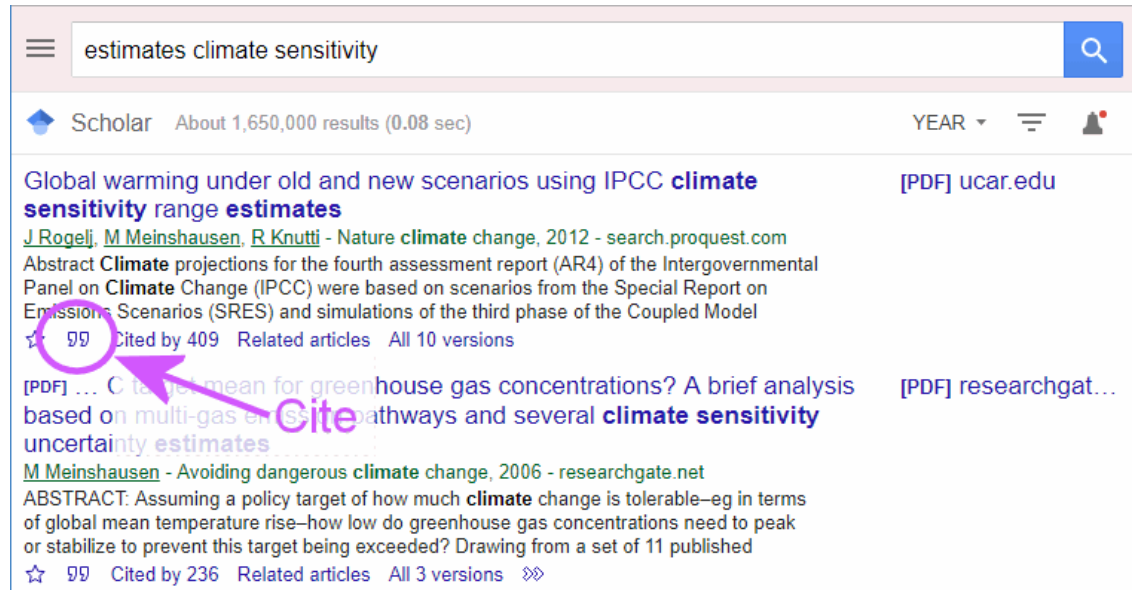
At the bottom of this .Rmd file, I have inserted the line

```
# References
```

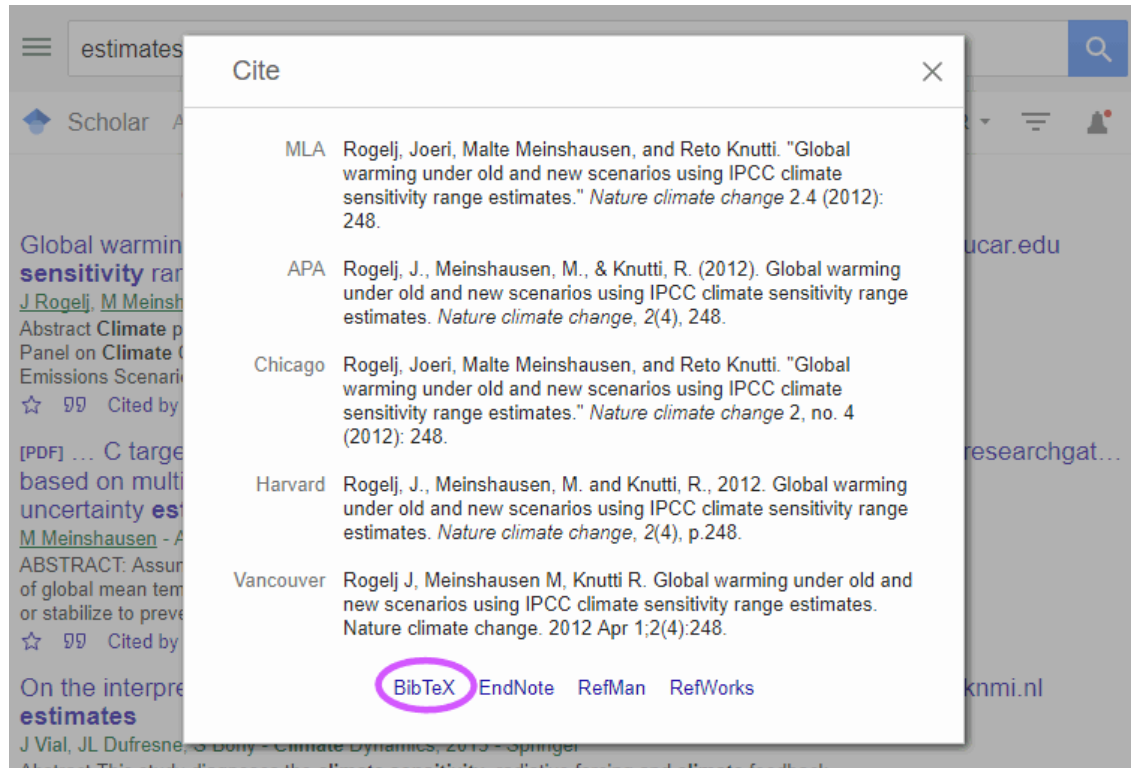
Adding entries to the bibliography file

If you want to add new references to the bibliography file, you can open lab-08.bib in RStudio and edit it by hand, but that may be difficult and confusing, so I would recommend one of three options:

- From Google Scholar, you can export a BibTeX entry:
 1. Open lab-08.bib in RStudio and then open a web browser, go to <https://scholar.google.com> and search for your reference.
 2. When you find the reference you want in Google Scholar, and click on the “Cite” button, as shown below:



3. Click on “BibTeX” at the bottom of the citation page, as shown below:



4. You will see something like this:

```
@article{rogelj2012global,
  title={Global warming under old and new scenarios using IPCC climate
        sensitivity range estimates},
  author={Rogelj, Joeri and Meinshausen, Malte and Knutti, Reto},
  journal={Nature climate change},
  volume={2},
  number={4},
  pages={248},
  year={2012},
  publisher={Nature Publishing Group}
}
```

Copy the entry and paste it into lab-08.bib in RStudio.

In this entry, rogelj2012global is the key you would use for citing and the other fields are pretty much self-explanatory.

You can export in other formats that are used by other bibliographic software, but these are more cryptic and confusing to use.

For instance, if you clicked on "EndNote," you would see something like this:

```
%O Journal Article
%T Global warming under old and new scenarios using IPCC climate
  sensitivity range estimates
%A Rogelj, Joeri
%A Meinshausen, Malte
%A Knutti, Reto
%J Nature climate change
%V 2
```

```
%N 4
%P 248-253
%@ 1758-6798
%D 2012
%I Nature Publishing Group
```

and if you clicked on “RefMan,” you would see something like this:

```
TY - JOUR
T1 - Global warming under old and new scenarios using IPCC climate
    sensitivity range estimates
A1 - Rogelj, Joeri
A1 - Meinshausen, Malte
A1 - Knutti, Reto
JO - Nature climate change
VL - 2
IS - 4
SP - 248
EP - 253
SN - 1758-6798
Y1 - 2012
PB - Nature Publishing Group
ER -
```

I find the BibTeX (.bib) format easier to work with because the data has names that make sense to people, like “journal” instead of “JO” or “%J.”

- If you have a bibliographic program like Zotero, Mendeley, or EndNote, export the references you want as BibTeX files.

For instance, in Zotero,⁴ highlight the references, right click, and from the context menu choose “Export Items...”; then select “BibTeX” format, click “OK” and save the exported items to a file.)

Next, open the file you just exported and lab-05.bib in RStudio and copy and past the references from the exported file into lab-05.bib.

- If you have JabRef⁵ installed on your computer, you open lab-08.bib, manually create a new bibliographic entry and fill in the relevant data.

References

Archer, David. 2011. *Global Warming: Understanding the Forecast*. 2nd edition. Hoboken, NJ: Wiley.

Jaeger, Carlo, Hans Joachim Schellnhuber, and Victor Brovkin. 2008. “Stern’s Review and Adam’s Fallacy.” *Climatic Change* 89: 207–18.

Nordhaus, William D. 2013. *The Climate Casino: Risk, Uncertainty, and Economics for a Warming World*. New Haven, CT: Yale University Press.

Pielke, Jr., Roger. 2010. *The Climate Fix: What Scientists and Politicians Won’t Tell You about Global Warming*. New York: Basic Books.

Rogelj, Joeri, David L. McCollum, Andy Reisinger, Malte Meinshausen, and Keywan Riahi. 2013. “Probabilistic Cost Estimates for Climate Change Mitigation.” *Nature* 493: 79–83.

⁴Zotero is free software that runs on Windows, MacOS, and Linux, and you can download it from <https://zotero.org>

⁵JabRef is free software that runs on Windows, MacOS, and Linux and you can download it from <https://jabref.org>.